

**Remarks**

Claims 1 to 20 remain pending. No amendments to the claims or to any other part of the application are submitted herewith. Reconsideration and continued prosecution of the present application are respectfully requested in view of the following remarks.

Claims 1-20 were rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent 6,096,247 (Ulsh et al.) in view of U.S. Patent 4,601,861 (Pricone et al.). Applicants respectfully submit that this rejection cannot be sustained.

Applicants agree with the Examiner that Ulsh et al. fails to teach passing the sheeting through an “extended” heated zone, and also fails to teach that the first sheeting is supported on at least one belt. Applicants disagree, however, that it would have been obvious to modify Ulsh et al with the teachings of Pricone et al. or with other information “quite well known in the art” to arrive at the methods claimed in independent claims 1 or 13. Applicants wish to point out that the present invention is claimed as specific improvements or niches within the very broad and generic concepts that are taught and/or claimed in the Marecki et al. patents mentioned in the Background section of the present application. That is, it has been admitted that the claimed improvements relate to processes for imparting a glittering or sparkling appearance to an initially non-glittering cube corner sheeting by exposing the sheeting to heat, pressure, or a combination thereof. The Background section of the present application also explains that attempts were made to make glittering cube corner sheeting by feeding non-glittering cube corner sheeting into a heated nip using a heated roller or rollers, but certain problems were encountered: the high pressures and temperatures required to produce a glittering appearance tended to cause the rubber surface of the roller to break down, and also sometimes resulted in shrinkage or puckering of the sheeting after passing through the nip; furthermore, only relatively slow process speeds could be achieved. The Applicants discovered that these problems could be overcome, and an excellent and consistent glittering appearance could be achieved in the end product, by heating the entire non-glittering cube corner sheeting thoroughly by passing it through an extended heated zone. Since the more thoroughly heated film was softer and thus susceptible to deformation or distortion from web tension or from its own weight, they also then found it efficacious to support the sheeting with at least one belt as

it passed through the extended heated zone. Accordingly, independent claims 1 and 13 both recite “passing the first sheeting through an extended heated zone” and “supporting the first sheeting with at least one belt during the” passing step (and during an applying pressure step in the case of claim 1, and during a passing ... through a nip step in the case of claim 13).

Ulsh et al. does not recognize the problems encountered by the present Applicants, nor does it teach or suggest the claimed solution. Indeed, in contrast with the present claims, Ulsh et al. teaches softening at least one of a first and second major *surface* of an optical polymer film. See e.g. col. 2 lines 45-55. See also col. 6 lines 29-32, where heating of a surface is described as not causing a significant change in the bulk film. Consistent with the idea of surface heating, emphasis is placed on faster processing speeds. See e.g. col. 2 lines 34-42; col. 3 lines 54-58; col. 6 lines 56-65; col. 10 lines 1-4 (“[f]or the second class of optical films, those that do not lose their optical properties easily when exposed to excessive heat, the primary utility of the process of the invention lies in improved manufacture speed.”); col. 18 lines 5-25 (describing a line speed of 45 m/min and a dwell time of 0.9 sec for retroreflective cube corner films of Examples 13 and 14). Note also the comment at col. 8 lines 16-18 of Ulsh et al., where it is taught that generally, the film *surface* is flame treated as the film itself moves over a *cooled* support, e.g. a cooled roll, to prevent film distortion.

All of this is in contrast to the method step “passing the first sheeting through an extended heated zone” in present claims 1 and 13, and, by dependency, in the remaining claims.

Furthermore, although Ulsh et al. teach that the film “may *move over* a support, such as a backing roll, while being exposed to the source of heat” (col. 6 lines 35-36, emphasis added), this is far different from actually “supporting the sheeting” with at least one belt during the passing-through-an-extended-heated-zone step, as currently claimed. The film winding arrangements of FIGS. 1 and 2 of Ulsh et al. also provide no suggestion why supporting the film (with a belt or otherwise) would be necessary or desirable.

In sum, Ulsh et al. neither teaches, suggests, nor provides any motivation to provide a method where a first sheeting is “pass[ed] ... through an extended heated zone” and “support[ed] ... with at least one belt during the” passing step as currently claimed. U.S. Patent

4,601,861 (Pricone et al.) does not remedy these deficiencies. The “endless metal belt 48” of Pricone et al. is used as an embossing tool to form the (initial) pattern of cube corner elements, not as a device to carry a previously formed cube corner sheeting through an extended heated zone. See e.g. col. 5 lines 32-35 and col. 4 lines 41-53 of Pricone et al. Such a belt would have no apparent utility in the device of Ulsh et al., since the non-glittering cube corner starting material processed in Ulsh et al. is already formed prior to the flame embossing process that produces a glittering effect. See e.g. col. 18 lines 5-57. Even a forced combination of the two references would at best result in the endless belt embossing tool of Pricone et al. being substituted for embossing rolls 20, 50, or 56 of Ulsh et al., which embossing rolls are shown to be spaced apart from the flame or other heat source (see FIGS. 1 and 2 of Ulsh et al.). Moreover, a cube-corner endless belt embossing tool that contacts the cube-corner side of a non-glittering cube corner sheeting would presumably engage the cube corner elements and maintain them in their original alignment, frustrating the purpose of Ulsh et al. to produce glittering cube corner sheeting.

In view of the foregoing, the rejection of independent claims 1 and 13 under 35 USC § 103(a) cannot be sustained and should be withdrawn. The rejection of dependent claims 2-12 and 14-20 should be withdrawn for the same reasons, and further because of the additional limitations contained therein which even further distinguish the claimed invention from the references.

**Conclusion**

In view of the above, it is submitted that the application is in condition for allowance. Beyond the fee for an extension of time authorized above, it is believed that no further fee is due; however, in the event any further fee is required, please charge any such fee to Deposit Account No. 13-3723.

Respectfully submitted,

23 Feb 2004  
Date

By: Stephen C. Jensen  
Stephen C. Jensen, Reg. No.: 35,207  
Telephone No.: (651) 736-3369

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
Facsimile No.: 651-736-3833